Emerging External Trends and Their Implications for ORD's Future

To complement and confirm the results of internal planning, we held discussions throughout 1999 with our internal EPA customers, other governmental organizations, and key external stakeholders from trade associations, professional societies, and public interest organizations. These discussions focused on gathering customer and stakeholder perspectives on the future of science and environmental protection over the next 10 to 20 years, and on related demands and expectations facing EPA. These meetings produced a broad consensus about several significant, persistent, and highly relevant trends. The details concerning our June 3, 1999, external stakeholder meeting can be found on the Internet at *http://www.epa.gov/ORD/SP.*

ORD's customers and stakeholders believe that the nature of environmental protection is changing in significant ways. One of their most important observations is that certain approaches to environmental protection—which produced environmental gains over the past 30 years—have begun to yield only marginal returns in the face of continued population growth and economic expansion. Using traditional regulation of large municipal and industrial sources of pollution and focusing on individual chemicals, pollutant classes, or a single medium can no longer, by themselves, be counted on to provide the level of environmental protection that the American people desire.

ORD's Customers and Stakeholders

ORD's ***customers*** are those who directly use ORD's research products and technical assistance to protect human health and safeguard the environment. ORD's primary customers are EPA's program and regional offices but also include state environmental agencies, tribal organizations, and other parts of the federal government.

ORD's ***stakeholders*** are those individuals or organizations with a specific interest in ORD's work and accomplishments. This larger set includes industry, trade associations, the academic research community, public interest groups, and in the broadest sense, the American people. Some stakeholders may also be customers.

Further, these traditional approaches, while still necessary, are not likely to effectively address new issues such as global climate change, loss of habitat and biodiversity, non-point source pollution, and risks associated with emerging technologies. In addition, rising public expectations call for finely tuned environmental solutions addressing the needs or special circumstances of specific populations (such as the elderly or children) and specific communities, water bodies, or airsheds.

As a consequence, while EPA's traditional media programs will continue to be the mainstays of the environmental protection system in the United States, new or different and more complex approaches will be required to realize significant environmental gains in the future. Examples of these approaches include market-based approaches, voluntary programs, greater information sharing to allow for informed risk-based decisions by individuals and corporations, and partnerships with others concerned with human health protection and environmental stewardship.

The following trends were identified by our customers and stakeholders as likely to have the greatest influence on ORD over the next 10 to 20 years:

- *New arrangements among EPA and individual citizens, states, tribes, industry, and other organizations* will be developed, driven by changing needs and expectations for more cooperative arrangements with industry and community-based decision-making.

- *Traditional single-medium problems and programs* will face new challenges because of continued population growth, economic expansion, and aging infrastructure.

- The complexity of emerging environmental issues will place a premium on *integrated, multimedia, multidisciplinary research* to allow for sound decision-making where difficult, subtle, and possibly uncertain trade-offs of risk and risk management are involved.

- *New technologies* (e.g., miniaturization, energy generation, transportation, remote sensing) offer great promise to ameliorate existing problems and provide better information about the state of the environment, but also may bring with them new risks that need to be assessed.

- An aging, more affluent, and better educated society will have *greater expectations for environmental quality,* including ecological restoration (to complement environmental protection), which will lead to greater demands for environmental information.

- The increasing availability of environmental information and tools for interpreting this information, especially over the Internet, will require *increased and improved risk communication.*

- There is a need to expand our understanding of environmental research so that *the findings of economics, sociology, psychology, and other social sciences can be incorporated into decision-making,* because environmental protection increasingly focuses on the decisions and behaviors of individuals as consumers, commuters, and property-owners.

The sum of these anticipated trends is a growing role for scientific information in the formulation, development, and implementation of public policy toward the environment, and consequently, a potentially growing role for ORD.

The perspectives of ORD's customers and stakeholders have offered us a look into the future and a basis for better understanding the challenges we face as we try to achieve our mission. Consideration of these trends and their implications for how we plan, conduct, and manage our research were influential in the development of the goals, objectives, and actions in the *Strategic Plan*. It should also be noted that, an implicit assumption for the development of the *Plan* was that public attitudes toward the environment and funding for environmental protection and research would remain fairly stable over the next decade.